1890MNRAS..50..519L

On the Proper Motions of Three Stars. By W. T. Lynn, B.A.

In vols. xxxi. and xxxiii. of the *Monthly Notices* I gave the proper motions, by the aid of a few then recent Greenwich observations, of three stars which had been found to have large motions. But as all three are contained in the new 10-year catalogue, it is now possible to deduce tolerably accurate values of the proper motions from Greenwich observations (all made with the same instrument and directly comparable) only. This I here proceed to do, and beg to offer the results to the Society, taking the stars in the order of right ascension.

1. The first is Lalande 21185 = W. B. (2) X. 1112. In my paper in the *Monthly Notices* for November 1872 (vol. xxxiii. p. 52), I gave the (corrected) values deducible from the places used in the two 7-year catalogues, the first of which was in both elements, the second in N.P.D. (in which element the proper motion is large) only. Adding to these the places given in the 9-year and the 10-year catalogues we obtain :—

Epoch.	R.A.	No. of Obs.	N.P.D.	No. of Obs.	Authority.
	h m s		° ′ ″		
1860	10 55 40·56	2	53 5 34·86	2	7-year Cat. (1860)
1864	...	0	53 7 9·24	2	7-year Cat. (1864)
1872	10 56 20·17	4	53 10 21·90	4	9-year Cat.
1880	10 56 46·49	5	53 13 34·61	5	10-year Cat.

The precession for 1860 is $+3^{s}\cdot349$ (diminishing to $+3^{s}\cdot344$ in 1880) in R.A. and $+19''\cdot27$ (increasing to $+19''\cdot30$) in N.P.D. From this it would seem that, as the amount of apparent change from 1860 to 1872 is $+39^{s}\cdot61$ or $+3^{s}\cdot301$ per annum in R.A., and $+4'\,47''\cdot04$ or $+23''\cdot92$ per annum in N.P.D., the proper motion deducible from a comparison between the first 7-year and the 9-year catalogues is $-0^{s}\cdot046$ in R.A. and $+4''\cdot64$ in N.P.D. Comparing the places in the first 7-year and in the 10-year catalogues (separated by an interval of 20 years) we obtain similarly a proper motion of $-0^{s}\cdot049$ in R.A. and $+4''\cdot70$ in N.P.D.

2. The second of these stars is Lalande 21258 = W. B. (2) X. 1174, of which I gave the place (corrected) from the second 7-year catalogue in the *Monthly Notices* for December 1872 (vol. xxxiii. p. 102). Tabulating this together with the places in the 9-year and the 10-year catalogues, we obtain :—

Epoch.	R.A.	No. of Obs.	N.P.D.	No. of Obs.	Authority.
	h m s		° ′ ″		
1864	10 58 42·55	1	45 46 33·67	1	7-year Cat. (1864)
1872	10 59 6·74	3	45 48 58·33	3	9-year Cat.
1880	10 59 30·54	7	45 51 26·19	6	10-year Cat.

Downloaded from http://mnras.oxfordjournals.org/ by guest on June 4, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System

1890MNRAS..50..519L

Apparent Mean Annual Variations.

Years.	Ann. Var. in R.A.	Ann. Var. in N.P.D.
	s	″
1864–1872	+3·024	+18·08
1872–1880	+2·975	+18·48

Now, as the annual precession is, for the mean epoch, $+3^{s}\cdot413$ in R.A. and $+19''\cdot35$ in N.P.D., we have, for the mean proper motions from the two comparisons, $-0^{s}\cdot413$ in R.A. and $-1''\cdot07$ in N.P.D.

3. The third and last of these stars is Oeltzen's Argelander 17415–6, of which I gave a provisional determination of the proper motion in the *Monthly Notices* for December 1870 (vol. xxxi. p. 42). It was not, as it happened, included in any great Greenwich catalogue until the 9-year; I can therefore now only compute its proper motion from Greenwich observations by comparing the places in that catalogue and in the recent 10-year. The former (where it is No. 1619) is R.A. $17^{h}\ 37^{m}\ 10^{s}\cdot302$, N.P.D. $21^{\circ}\ 32'\ 38''\cdot94$; number of observations, four in each element; epoch 1872. The latter (where it is No. 2786) is R.A. $17^{h}\ 37^{m}\ 7^{s}\cdot400$, N.P.D. $21^{\circ}\ 33'\ 4''\cdot15$; number of observations, four in each element; epoch 1880. This gives apparent annual variation $-0^{s}\cdot363$ in R.A. and $+3''\cdot15$ in N.P.D.; and as the precession for the mean epoch is $-0^{s}\cdot297$ in R.A. and $+2''\cdot00$ in N.P.D., we have, finally, for the deduced values of the proper motion in R.A. and N.P.D. respectively, $-0^{s}\cdot066$ and $+1''\cdot15$.

Blackheath:
1890 *April* 23.

On a coming Conjunction of a Remarkable Dark Spot on Jupiter with the Red Spot, and the relative Altitudes of these Objects.

By A. Stanley Williams.

It is now twelve years since the great Red Spot made its appearance upon *Jupiter*, or at least since it first attracted general attention, and notwithstanding all the consideration that has been bestowed upon it during these twelve years, it still remains almost as much of an enigma as at its first appearance. Especially nothing is yet known for certain with regard to the altitude of the spot in the atmosphere of the planet, or with reference to neighbouring markings. A number of observations, it is true, have been made bearing upon this subject, but they are none of them decisive. Indeed, they differ curiously from each other. The object of this note is to call attention to an *unrivalled and unique opportunity* of obtaining conclusive evidence upon this important question, which is now on the point of occurring.

It is well known that most of the spots and markings of *Jupiter* situated to the south of the great equatorial system of

Downloaded from http://mnras.oxfordjournals.org/ by guest on June 4, 2015

© Royal Astronomical Society • Provided by the NASA Astrophysics Data System